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10/551,971	10/05/2005	Henricus Antonius Van Vugt	PHNL030360 US	3597

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EXAMINER
REZA, MOHAMMAD W

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2436	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 October 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-23</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-23</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>10/05/05-01/24/07</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Cooklev (US patent 6,359,998) in view of Abe (US Patent 6,580,804).

3.   As per claim 1, Cooklev discloses a method (10) including the steps of: (a)

accumulating data (50) corresponding to a spatial sub-region (40) of one or more

images (30) in the sequence (20),; (b) performing one or more transformations (60) on

the accumulated data (50) to generate corresponding transformed data (70) for storing

in a second memory (70; 310) (col. 3, lines 32-46, col. 4, lines 32-50, col. 7, lines 24-34,

col. 8, lines 20-34, col. 11, lines 45-67): (c) comparing (80, 90) the transformed data

(70) stored in the second memory with one or more reference watermarks (100) to

determine associated one or more degrees of similarity; and (d) outputting one or more

results indicative of whether or not said one or more degrees of similarity exceed one or

more defined similarity thresholds, and thereby indicative of whether or not one or more

of the reference watermarks are present in the sequence (20) of images (30) (col. 5,

lines 32-59, col. 12, lines 50-67, col. 13, lines 1-55). Although, Cooklev disclose stores

the image sequence. He does not expressly disclose accumulating the sub-region of images and storing the accumulated data in a first memory (50; 310). However, in the same field of endeavor, Abe discloses accumulating the sub-region of images and storing the accumulated data in a first memory (50; 310) (col. 3, lines 45-67, col. 4, lines 1-10, col. 6, lines 13-32).

Accordingly, it would been obvious to one of ordinary skill in the network security art at the time of invention was made to have incorporated Abe's teachings of storing the sub-region of image sequence with the teachings of Cooklev, for the purpose of suitably using the image sequence for detecting the watermark by comparing with the reference data.

4.   As per claim 2, Cooklev discloses a method wherein the spatial sub-region (40) of said one or more images (30) corresponds to a substantially central sub-region (40) thereof (col. 4, lines 32-50, col. 7, lines 24-34, col. 8, lines 20-34).

5.   As per claim 3, Cooklev discloses a method wherein comparison in step (c) of said transformed data (70) in the second memory means with said one or more reference watermarks (100) is executed by way of correlation (90) (col. 5, lines 32-59, col. 12, lines 50-67).

6.   As per claim 4, Cooklev discloses a method wherein said one or more reference watermarks (100) are Hanning-type windows for use in mutually correlating accumulated data from a plurality of watermarked sub-regions present in the sequence

(20) of images (30) for watermark detection purposes (col. 4, lines 32-50, col. 7, lines 24-34, col. 8, lines 20-34).

7.   As per claim 5, Cooklev discloses a method wherein the steps (a) to (d) are executed in one or more of hardware (300) and software in a time division multiplexed manner during which said one or more of hardware (300) and software is capable of executing other functions (col. 3, lines 32-46, col. 4, lines 32-50, col. 7, lines 24-34).

8.   As per claim 6, Cooklev discloses a method wherein the second memory (70; 310) is of sufficient memory capacity so that all data elements present in the first memory (50) are mapped in step (b) by said one or more transformations onto corresponding elements in the second memory (70), thereby substantially circumventing loss of information associated with transforming spatially peripheral regions of the accumulated data (col. 5, lines 32-59, col. 12, lines 50-67).

9.   As per claim 7, Cooklev discloses a method wherein the first and second memories (50, 70) are arranged to have a capacity corresponding substantially to data associated with the spatial sub-region (40) of the one or more images (30) in the sequence (20) (col. 6, lines 32-59, col. 12, lines 50-67).

10.   As per claim 8, Cooklev discloses a method wherein the steps (b) and (c) are executed a plurality of times to provide a substantially exhaustive search through the accumulated data in said first memory means within defined searching limits for detecting the presence of one or more watermarks in the accumulated data (50) (col. 7, lines 24-34, col. 8, lines 20-34, col. 11, lines 45-67).

11.   As per claim 9, Cooklev discloses a method wherein a Hanning-type window
(200, 210) is applied to the transformed data (70) stored in the second memory (70;
310) in step (c) before comparing with said one or more reference watermarks (100)
(col. 7, lines 24-34, col. 8, lines 20-34, col. 11, lines 45-67).

12.   As per claim 10, Cooklev discloses a method wherein the one or more reference
watermarks (100) are subjected to a Hanning-type window (200, 210) in step (c) for use
in comparing with the transformed data (70) (col. 6, lines 32-59, col. 12, lines 50-67).

13.   As per claim 11, Cooklev discloses a method wherein the Hanning-type window
(200, 210) is arranged to have progressively decreasing spatial peripheral extent (col. 6,
lines 32-59, col. 12, lines 50-67).

14.   As per claim 12, Cooklev discloses a method wherein said one or more reference
watermarks (100) are blurred representations of corresponding one or more unblurred
reference watermarks (col. 4, lines 32-50, col. 7, lines 24-34, col. 8, lines 20-34).

15.   As per claim 13, Cooklev discloses a method wherein in step (c) at least one of
the accumulated data (50) and the transformed data (70) is subjected to blurring to
render comparison with said one or more reference watermarks less sensitive to
selection of the inverse transform (60) (col. 6, lines 32-59, col. 12, lines 50-67).

16.   As per claim 14, Cooklev discloses a method wherein the method (10) is
arranged to employ blurred representations of said one or more unblurred reference
watermarks for initially identifying one or more watermarks present in the accumulated
data (50), and then subsequently arranged to employ substantially unblurred reference

watermarks for analysing the accumulated data (50) (col. 6, lines 32-59, col. 12, lines 50-67).

17.   As per claim 15, Cooklev discloses a method wherein the spatial region (40) includes a blurred watermark (col. 6, lines 32-59, col. 12, lines 50-67).

18.   As per claim 16, Cooklev discloses a method wherein the data (50) accumulated in step (a) in the first memory (50; 310) is continuously updated as images (30) of the sequence (20) are received, and the steps (b) to (d) are repetitively applied to said continuously updated accumulated data (50) (col. 6, lines 32-59, col. 12, lines 50-67).

19.   As per claim 17, Cooklev discloses a method wherein said one or more transformations (60) in step (b) include at least one of translation, rotation, skew, warp, scaling and flip transformations (col. 6, lines 32-59, col. 12, lines 50-67).

20.   As per claim 18, Cooklev discloses a method wherein the method (10) in employed temporally alternately and/or concurrently with one or more conventional watermark detection processes (col. 7, lines 24-34, col. 8, lines 20-34, col. 11, lines 45-67).

21.   As per claim 19, Cooklev discloses a method wherein the method is invoked when said one or more conventional detection processes fail to detect the presence of one or more watermarks in the sequence of images (20) (col. 5, lines 32-59, col. 12, lines 50-67).

22.   As per claim 20, Cooklev discloses a method wherein, in step (a), position of the sub-region (40) from which the data is accumulated from said images (30) is selectable between a plurality of locations within said images (30), and said one or more reference watermarks (100) for use in step (c) are chosen depending upon which of said locations is selected (col. 5, lines 32-59, col. 12, lines 50-67).

23.   As per claim 21, Cooklev discloses a method wherein arranged to be executable in one or more of a settop box, a DVD player, a DVD recorder, an MPEG encoder, an MPEG decoder a VWM marker, and storage device and a display device (col. 6, lines 32-59, col. 12, lines 50-67).

24.   As per claim 22, Cooklev discloses a watermark detector (300) including: (a) accumulating means (50, 310, 350) for accumulating data corresponding to a spatial sub-region (40) of one or more images (30) in the sequence (20),; (b) transforming means (330, 340, 350) for performing one or more transformations on the accumulated data (50) from the first memory (50, 310) to generate corresponding transformed data (70) for storing in a second memory (70, 310) (col. 3, lines 32-46, col. 4, lines 32-50, col. 7, lines 24-34, col. 8, lines 20-34, col. 11, lines 45-67): (c) comparing means (340, 350) for comparing the transformed data (70) stored in the second memory (70, 310) with one or more reference watermarks (100) to determine associated one or more degrees of similarity; and (d) outputting means (360) for outputting one or more results indicative of whether or not said one or more degrees of similarity exceed one or more defined similarity thresholds, and thereby indicative of whether or not one or more of the reference watermarks (100) are present in the sequence (20) of images (30) (col. 5,

lines 32-59, col. 12, lines 50-67, col. 13, lines 1-55). Although, Cooklev disclose stores

the image sequence. He does not expressly disclose accumulating the sub-region of

images and storing the accumulated data in a first memory (50; 310). However, in the

same field of endeavor, Abe discloses accumulating the sub-region of images and

storing the accumulated data in a first memory (50; 310) (col. 3, lines 45-67, col. 4, lines

1-10, col. 6, lines 13-32).

The same motivation that was utilized in the combination of claim 1 applies equally as

well to claim 22.

25.   As per claim 23, Cooklev discloses a detector (300) according to claim 22,

incorporated into one or more of a settop box, a DVD player, a DVD recorder, an MPEG

encoder, an MPEG decoder a VWM marker, a data storage device and a display device

(col. 4, lines 32-50, col. 7, lines 24-34, col. 8, lines 20-34, col. 11, lines 45-67).

Conclusion

26.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Mohammad w. Reza whose telephone number is 571-

272-6590. The examiner can normally be reached on M-F (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, MOAZZAMI NASSER G can be reached on (571)272-4195. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

/Nasser G Moazzami/   /Mohammad W Reza/

Supervisory Patent Examiner, Art Unit 2436   Examiner, Art Unit 2436